

**CURRICULUM VITAE**  
S. THOMAS CARMICHAEL

**PERSONAL HISTORY**

Business Address: Department of Neurology  
Geffen School of Medicine at UCLA  
710 Westwood Plaza  
Los Angeles, CA 90095  
310-206-0550

**EDUCATION**

B.S. University of California, Los Angeles, 1986, Biology  
Ph.D. Washington University, St. Louis, Missouri, 1993, Neuroscience  
M.D. Washington University School of Medicine, St. Louis, Missouri, 1994  
Medical Internship Barnes Hospital, St. Louis, MO, 1994-1995  
Neurology Residency Washington University School of Medicine, 1995-1998  
Neurological UCLA School of Medicine, 1998-2001  
Rehabilitation Fellowship

**PROFESSIONAL EXPERIENCE**

2007- Associate Professor, Department of Neurology, UCLA School of  
Medicine  
2001-2007 Assistant Professor, Department of Neurology, UCLA School of Medicine  
2000 Board Certified in Adult Neurology, American Academy of Psychiatry  
and Neurology  
1998-2001 Clinical Instructor, Department of Neurology, UCLA School of Medicine  
1997-1998 Administrative (Chief) Resident, Department of Neurology, Washington  
University School of Medicine, St. Louis, MO  
1995-1998 Resident in Neurology, Washington University School of Medicine,  
St. Louis  
1996 Clinical Instructor, Preparation for Clinical Medicine course, first year  
medical students, Washington University School of Medicine  
1994-1995 Medical Internship, Barnes Hospital, St. Louis, MO  
1991-1993 Teacher, "Hands On Neuroscience", middle school science outreach  
1990 Tutor, medical school neurological pathophysiology course, Washington  
University School of Medicine  
1989 Teaching Assistant, medical school anatomy course, Washington  
University School of Medicine

**PROFESSIONAL ACTIVITIES**

UCLA Committee Service:

Department of Neurology Residency Selection Committee, 2004-2006  
Department of Neurology Quality Assurance Committee, 2003-2007  
Training Program in Neural Repair Steering Committee: 2002-present  
Graduate Student Interdepartmental Neuroscience Ph.D. Program Admissions Committee, 2003

Graduate Student Thesis Committees (Mathew Aldag, Michael Kane, Gretchen Miller, John Ohab, Justine Overman, David Johnston), UCLA Neuroscience IDP Students, 2003-present  
Larry L. Hillblom Islet Cell Research Center, Review Board, 2005-present  
Department of Neurobiology/UCLA Stem Cell Center Faculty Search Committee-2006  
Department of Neurology Director Residency Didactics, 2008--  
Committee to Administer the UCLA Neuroscience Interdepartmental PhD Program, 2008-

Grant Review/Advisory Committee Service:

CURE Epilepsy grant review, 4/2006  
NIH CSR Study Section BINP, 5/2006—present  
WM Keck Foundation, 8/2007  
American Heart Association Grant Review: Western Review Consortium, 4/2007--present  
BDCN-Y NIH Study Section, 2/07  
NIH/NINDS Stroke Progress Review Group, Biology of Repair subcommittee  
STEPS, Stem Cell Therapy in Stroke, Review and Advisory Panel, 10/2007  
BINP NIH Study Section, Charter member, 2006—present  
America Federation of Aging Research National Scientific Advisory Council

Professional Associations:

American Neurological Association  
American Academy of Neurology  
Society for Neuroscience  
American Society of Neurorehabilitation  
Alpha Omega Alpha Medical Honor Society

Editorial Services:

Member, Editorial Board, *Journal of Neurorehabilitation and Neural Repair*  
Member, Editorial Board, *Journal of Neurodegeneration and Regeneration*  
Ad hoc reviewer for: *Journal of Neuroscience*, *Stroke*, *Journal of Neuroscience Research*,  
*Neurobiology of Disease*, *Neuroimage*, *Psychoneuropharmacology*, *Journal of Comparative*  
*Neurology*, *Pediatric Research*, *Nature Medicine*, *Drug Discovery Today*, *Brain*, *BMC*  
*Neuroscience*, *Neuropharmacology*, *Brain*, *Stroke*, *Journal of Cerebral Blood Flow & Metabolism*

Clinical Responsibilities:

Attending Physician, UCLA Neurorehabilitation and the UCLA Stroke Services, 7/1998-present  
Outpatient Neurology Clinic, 7/1998-present

UCLA Teaching:

Neuroscience 101a, Undergraduate neuroscience course, clinical correlations lecture, 1999-present  
Neuroscience 197a, Undergraduate Neurobiology of Disease course, Stroke Lecture, 1999-present  
MS203, Medical Student Neuroscience Course, Stroke Pathophysiology and the Neurological Exam, 1999-2004  
Neuroscience 211c, Graduate Student seminar, Topics in Molecular Neurobiology, 2001, 2004

Medical Student Third Year Neurology/Psychiatry Clerkship, Small Group Discussions, 1999-2004

Medical Student Second Year Fundamentals of Clinical Medicine Neurological Exam, 1999-present

#### **HONORS AND SPECIAL AWARDS:**

Larry L. Hillblom Foundation Distinguished Scholar Award, 2005

Frontiers in Science, UCLA Faculty Development Award, 2003

Howard Hughes Medical Institute Physician Post-Doctoral Research Fellow, 1998-2001.

#### ***Neurology Residency***

Selection as Administrative (Chief) Resident, 1997-1998, Department of Neurology, Washington University School of Medicine

Leonard Berg Award for Resident Teacher of the Year, 1998, Department of Neurology, Washington University School of Medicine

Irwin Levy Award for Outstanding Research during Residency, 1998, Department of Neurology, Washington University School of Medicine

Cortical Explorer Award/Krieg Cortical Kudos, 1997--Awarded by the Cajal Club for upstanding doctoral and post-doctoral contribution to cortical neuroscience

#### ***Washington University School of Medicine Honors:***

Election to Alpha Omega Alpha Medical Honor Society, 1994

Missouri State Medical Society Award for Clinical Excellence in Internal Medicine, 1994

James L. O'Leary Prize for Research in Neuroscience, 1993

Spencer T. and Anne W. Olin Medical Fellowship, 1993

American Heart Association Medical Student Research Fellowship, 1988

Lange Publishers Award for Achievement in Second Year of Medical School, 1988

Carl F. and Gerti T. Cori Prize in Biochemistry, 1987

George F. Gill Prize in Anatomy, 1987

Kehar Singh Chouke Prize in Anatomy, 1987

#### **RESEARCH GRANTS AND FELLOWSHIPS RECEIVED**

##### **CURRENT GRANTS**

**1 R01 NS053957-01A2** (Carmichael, PI)

NIH/NINDS

*Mechanisms of Neuronal Regeneration after Stroke in a Novel Neurovascular Niche*

This grant determines the molecular mechanisms of neurovascular signaling between angiogenic blood vessels and migrating neuroblasts after stroke.

**1 RO1 NS045729-01** (Carmichael, PI), 40% effort

NIH/NINDS

*Mechanisms of Axonal Sprouting after Stroke*

This grant determines the expression profile and functional role of growth-promoting and growth-inhibiting molecules in the peri-infarct cortex during post-stroke axonal sprouting.

California Institute of Regenerative Medicine (Carmichael, Co-PI)

*Epigenetic Regulation during the Differentiation of Human Embryonic Stem Cells: Impact on Neural Repair*

This grant determines the effect of in vitro propagation of human embryonic stem cells on the properties of self-renewal and neuronal differentiation and on the mechanisms of integration and functional repair after transplantation in stroke.

Network Grant (Carmichael, PI)

LARRY L. HILLBLOM FOUNDATION

The Larry L Hillblom Network for Neural Repair after Stroke

This grant combines four investigators into a study of cellular and molecular events that underlie plasticity in cortical brain maps and neuronal dendritic reorganization in mice and humans after stroke

**NATIONAL RESEARCH SERVICE AWARD**

NIH/NINDS

This training grant was awarded to Justine Overman, neuroscience doctoral candidate in my laboratory, for study of axonal growth inhibitors after stroke.

## **COMPLETED GRANTS**

**0555013Y** (Carmichael, PI), No salary support 7/01/05-6/30/07

AMERICAN HEART ASSOCIATION, Grant In Aid

*Neuronal Regeneration after Stroke: Molecular Studies on the Neurovascular Niche in Peri-Infarct Cortex.*

This grant determines the molecular mechanisms of adult neural stem cell differentiation and migration in aged animals after stroke.

**American Federation of Aging** (Carmichael, PI), No salary support 7/01/05-6/30/06

*Molecular Profile of Neuronal Regeneration in the Aged Brain after Stroke*

This grant determines the entire transcriptional profile, or regeneration transcriptome, that mediates axonal sprouting after stroke in the aged brain

**Distinguished Scholar Award** (Carmichael, PI), 10% effort 7/01/05-12/31/06

LARRY L. HILLBLOM FOUNDATION

*Molecular Definition of the Neural Stem Cell Niche after Stroke*

This grant determines the receptor/ligand systems that mediate signaling between migrating neuroblasts and astrocytes/endothelial cells after stroke.

**PAS-01-092** (Saver, PI), 5% effort 12/01/03-11/30/08

NIH/NINDS

*UCLA SPOTRIAS Center*

A multi-investigator center grant that tests the clinical efficacy of acute stroke therapies. Dr. Carmichael is a co-investigator, running the gene expression substudy on the molecular changes that underlie cerebral edema using biopsy material from surgical evacuation of cerebral hematomas.

**NATIONAL RESEARCH SERVICE AWARD** 9/01/04-8/30/07

NIH/NINDS

This training grant was awarded to John Ohab, neuroscience doctoral candidate in my laboratory, for study of neural stem cell responses after stroke.

**HOWARD HUGHES MEDICAL STUDENTRESEARCH FELLOWSHIP 9/01/04-8/31/06**  
**HHMI**

This grant was awarded to Diana Katsman, a medical student at UCI School of Medicine, for studies in my laboratory on the genetic profile of regenerating neurons after stroke.

**LARRY L. HILLBLOM FOUNDATION (Dobkin) 10/01/02-9/30/05**  
**NETWORK GRANT**

*Recovery of Walking in Older Persons after Stroke*

This grant examines the mechanisms of recovery of walking after stroke by mapping the recovery process in neural networks associated with walking using brain imaging in association with pharmacological therapies.

**MEDICAL STUDENT RESEARCH FELLOWSHIPS 6/04-8/04; 6/05-8/05**

**American Heart Association**

These summer research fellowships funded work by Willie Omar Siu (2004) and Uwais Zaid (2005) for research in the Carmichael laboratory. Mr. Siu went on to parlay this research experience into a position in the HHMI/NIH Cloister's program and then was accepted in the prestigious NIH/Oxford Biomedical Research Scholars Ph.D. program (modeled on the Rhodes Scholar program, but for biomedical science).

**LARRY L. HILLBLOM FOUNDATION (Carmichael) 1/01/02-1/02/04**  
**STARTUP GRANT**

*Mechanisms of Neural Repair in the Aged Brain after Stroke*

This grant examines the differences in the axonal sprouting and neurogenesis response after stroke in aged adult rats, in terms of the overall level of these two processes and differences in gene expression.

**FRONTEIRS IN SCIENCE (Carmichael) 7/01/03-6/30/04**  
**UCLA FACULTY ACHIEVEMENT AWARD**

*Stem Cell Responses after Stroke*

This grant characterized the molecular mechanisms of post-stroke neurogenesis, neuronal migration and differentiation into peri-infarct cortex.

**0160031Y (Carmichael) 7/01/01-7/01/03**

**AMERICAN HEART ASSOCIATION**

**BEGINNING GRANT IN AID**

Anatomical Process and Molecular Mechanisms of Axonal Sprouting after Focal Stroke in the Rat

This grant developed a stroke model designed for clinical relevance and to map the time course, location and molecular correlates of axonal sprouting after cerebral ischemia.

## **TRAINEES**

Kateri Spinelli B.S., 5/02-8/02, Hamilton College Undergraduate Summer Research Fellowship; Present Position: Laboratory Technician, Rockefeller University

Alex Venizelos B.S. 5/03-8/03, Hamilton College Undergraduate Summer Research Fellowship; Present Position: Third year medical student, Wayne State University School of Medicine

Janneth Momy B.S., 6/03-8/03, UCLA Medical Student Summer Research Fellowship; Present Position: Fourth year medical student, David Geffen School of Medicine at UCLA

Willie Siu Omar, B.S. 6/04-8/04, American Heart Association Medical Student Research Fellowship, Western States Affiliate; Present Position – HHMI/NIH Cloisters Program. Willie was just accepted to the Oxford/NIH Biomedical Ph.D. program. This is a newly created and highly prestigious program designed as a parallel in medical research to the Rhodes Scholar program.

John Ohab, B.S., 6/03-6/07. Graduate Student UCLA Neuroscience Interdepartmental Ph.D. Program, supported by NRSA--NIH/NINDS; Present Position: American Academy for the Advancement of Science Policy Fellow, NINDS. John Ohab has received many awards/honors/recognitions during his graduate school time. These include his NRSA, his selection as a sponsored visiting graduate student scholar in the Memphis St. Jude's Children's Hospital Medical Symposium, selection to the Route 28 Stem Cell conference and selection as most outstanding research project development during this conference, and most recently selection as the Eiduson Lecturer for the Joint Neuroscience seminar series.

Songlin Li, Ph.D. M.Sci., 4/03-present, Postdoctoral fellow, supported by AHA Post-doctoral Fellowship award; Present Position: Research Assistant, David Geffen School of Medicine at UCLA. Songlin LI has received his own fellowship grant, an AHA Post-doctoral fellowship award.

Diana Katsman B.S., 5/03-8/03, American Heart Association Medical Student Research Fellowship, Western States Affiliate; 8/04-present, Present Position: Howard Hughes Medical Student Research Fellowship in Dr. Tom Carmichael's laboratory. Diana received not only a highly competitive HHMI Medical Student fellowship, but also was given a second year of funding on this fellowship.

Uwais Zaid, B.S. 6/05-8/05, American Heart Association Medical Student Research Fellowship, Western States Affiliate. Present Position: Second year medical student David Geffen School of Medicine at UCLA. Uwais was just selected for the HHMI/NIH Cloisters program, a highly competitive one-year research fellowship within NIH.

Justine Overman, B.S., 3/06-present, First Year Graduate Student, UCLA Neuroscience Interdepartmental Ph.D. Program; Present Position: just selected Carmichael lab for graduate thesis.

Christine McGiffert, Ph.D., 6/06-present. Post-doctoral fellow.

Jin Zhong, Ph.D, 8/06-present, Post-doctoral fellow.

Elif Sozeman, MSTP student, 10/07-present. Medical Scientist Training Program student pursuing her Ph.D. in Carmichael lab.

## Bibliography

### RESEARCH PAPERS

#### A. RESEARCH PAPERS (PEER REVIEWED)

1. Perez CA, **Carmichael T.**, Devineni VR, Simpson JR, Frederickson J, Sessions D, Spector G, Fineberg B (1991) Carcinoma of the tonsillar fossa: A non-randomized comparison of irradiation alone of combined with surgery : long term results. *Head and Neck.* 13:82-90.
2. Daw NW, Sato H, Fox K, **Carmichael T.**, Gingerich R (1991) Cortisol reduces plasticity in the kitten visual cortex. *J. Neurobiol.* 22:158-167.
3. Drevets WC, Videen TO, Price JL, Prescorn SH, **Carmichael ST.**, Raichle ME (1992) A functional anatomical study of unipolar depression. *J. Neurosci.* 12:3628-3641
4. Price JL, **Carmichael ST.**, Drevets WC (1996) Networks related to the orbital and medial prefrontal cortex; a substrate for emotional behavior? *Prog. Brain Res.* 107:523-536.
5. **Carmichael ST.**, Price JL (1994) The anatomical organization of the orbital and medial prefrontal cortex of the macaque monkey. *J. Comp. Neurol.* 346:366-402.
6. **Carmichael ST.**, Clugnet M-C, Price JL (1994) The central connections of the olfactory system in the macaque. *J. Comp. Neurol.* 346:403-434.
7. **Carmichael ST.**, Price JL (1995) Limbic connections of the orbital and medial prefrontal cortex in the macaque. *J. Comp. Neurol.* 363:615-641.
8. **Carmichael ST.**, Price JL (1995) The sensory and premotor inputs to the orbital and medial prefrontal cortex in the macaque. *J. Comp. Neurol.* 363:642-664.
9. **Carmichael ST.**, Price JL (1996) The intrinsic connections of the orbital and medial prefrontal cortex in the macaque: Evidence for a hierarchy. *J. Comp. Neurol.* 371:179-207.
10. **Carmichael ST.**, Wei L, Rovainen CM, Woolsey TA (1997) Neuronal connections and cytochrome oxidase staining patterns in the ischemic penumbra following small cortical strokes in the somatosensory cortex of rats. *J. Cereb. Blood Flow Metab.* 17 suppl.:s312.
11. **Carmichael ST.**, Wei L, Rovainen CM, Woolsey, T.A. (2001) New patterns of intra-cortical connections after focal stroke. *Neurobiol Dis.* 8:910-922.
12. **Carmichael ST** (2002) New laboratory start-up in the 21<sup>st</sup> Century. *Trends Neurosci.* 25:287-288.
13. **Carmichael ST.**, Chesselet M-F (2002) Synchronous neuronal activity is a signal for axonal sprouting after cortical lesions in the adult. *J. Neurosci.* 22:6062-6070.
14. Katsman D, Spinelli K, Zhang J, **Carmichael ST** (2003) Tissue microenvironments within functional cortical subdivisions adjacent to focal stroke. *J Cereb Blood Flow Met.* 23:997-1009.
15. **Carmichael ST** (2003) Plasticity of Cortical Projections after Stroke. *The Neuroscientist.* 9:64-75.

16. **Carmichael ST** (2003) Gene expression changes after focal stroke, traumatic brain and spinal cord injury. *Curr Op Neurol.* 16:699-704.
17. **Carmichael ST**, Tatsukawa K, Katsman D, Tsuyuguchi N, Kornblum HI (2004) Evolution of diaschisis in a focal stroke model. *Stroke.* 35:758-63.
18. Mir HM, Tatsukawa KJ, **Carmichael ST**, Chesselet M-F, Kornblum HI (2004) Metabolic correlates of lesion-specific plasticity: an in vivo imaging study. *Brain Res.* 1002:28-34.
19. **Carmichael ST** (2005) Animal Models of Stroke: size, mechanism and purpose. *NeuroRx.* 2:396-409.
20. Li S, Zheng J, **Carmichael ST.** (2005) Increased oxidative protein and DNA damage but decreased stress response in the aged brain following experimental stroke.. *Neurobiol Dis.* 18:432-440.
21. **Carmichael ST**, Archibeque I, Luke L, Nolan T, Momiy J, Li S. (2005) Growth-associated gene expression after stroke: Evidence for a growth-promoting region in peri-infarct cortex. *Expt Neurol.* 193:291-311.
22. Visnyei K, Tatsukawa KJ, Erickson, RI, Simonian S, Oknaian N, **Carmichael ST**, Kornblum HI (2005) Neural progenitor implantation restores metabolic deficits in the brain following striatal quinolinic acid lesion. *Expt Neurol.* Nov. 23 e-publ.
23. Tsai PT, Ohab J, Kertesz K, Groszer M, Matter C, Gao J, Liu L, Wu H, **Carmichael ST** (2006) A critical role of erythropoietin receptor in neurogenesis and post-stroke recovery. *J Neurosci.* 26:1269-1274.
24. **Carmichael ST** (2006) Cellular and molecular mechanisms of neural repair after stroke: making waves. *Annals Neurol.*59:735-742.
25. Li S, **Carmichael ST** (2006) Growth-associated gene and protein expression in the region of axonal sprouting in the aged brain after stroke. *Neurobiol Dis* 23:362-73.
26. **Carmichael ST** (2006) Cellular and molecular mechanisms of neural repair after stroke: making waves. *Annal Neurol.* 59:735-742.
27. Ohab JJ, Fleming S, Blesch, A, **Carmichael ST.** A neurovascular niche for neurogenesis after stroke. *J Neurosci.* 26:13007-13016.
28. Popa-Wagner A, **Carmichael ST**, Kokaia Z, Kessler C, Walker LC (2007) The response of the aged brain to stroke: too much, too soon? *Curr Neurovasc Res* 4:216-227.
29. Ohab JJ, **Carmichael ST** (2008) Post-Stroke Neurogenesis: Emerging Principles of Migration and Localization of Immature Neurons. *The Neuroscientist.* 14:369-380.
30. **Carmichael ST** (2008) Themes and Strategies for Studying the Biology of Stroke Recovery in the Post-Stroke Epoch. *Stroke* 39:1380-1388.
31. **Carmichael ST**, Vespa PM, Saver JL, Coppola G, Geschwind DH, Starkman S, Miller C, Kidwell CS, Liebeskind DS, Martin NA (2008) Genomic profiles of damage and protection in human intracerebral hemorrhage. *J Cereb Blood Flow Metab.* 28:1860-1875.

## B. RESEARCH PAPERS - PEER REVIEWED (SUBMITTED)

I none at present time

## CHAPTERS

1. Price JL, **Carmichael ST**, Carnes KM, Clugnet M-C, Kuroda K, Ray JP (1991) Olfactory inputs to the prefrontal cortex. In Davis, J. and Eichenbaum, H. (eds.):

Olfaction as a Model System for Computational Neuroscience. MIT Press:Cambridge. pp. 101-120.

2. Amaral DG, Price JL, Pitkänen A, **Carmichael ST** (1991) Anatomical organization of the primate amygdaloid complex. In Aggleton, J. A. (ed.): The Amygdala. New York:Wiley-Liss, pp.1-66.
3. Dobkin B, **Carmichael, ST**. (2004) "Principles of recovery after stroke." In, Recovery After Stroke, Barnes M, Dobkin B, Bogousslavsky J (eds), Cambridge University Press.
4. Vinters, H, **Carmichael ST** (2007) "Cognitive Neurorehabilitation, 2<sup>nd</sup> ed: Evidence and Application" Stuss DT, Winocur G, Robertson, IH. (eds), Cambridge University Press..

### **LETTERS TO THE EDITOR**

1. Carmichael ST (1995) Hunger and the temporal lobe. *Neurology* 45:1026-1027.
2. Carmichael ST (1999) Respiratory management in acute CNS catastrophes. *Neurology* 52:217-218.

### **ABSTRACTS (within last five years)**

1. **Carmichael, S.T.**, Chesselet. M-F. Used and Improved: Activity and its role in growing new connections in the developing and adult CNS. January, 2003. Winter Conference on Brain Research.
2. Li, S, Zheng, J, **Carmichael, ST**. Differences in ischemic cell death in the young adult and aged rat brain. UCLA Conference on Aging. June, 2003.
3. Li S. , Zheng J., **Carmichael ST**. Differences in ischemic cell death in the young adult and aged rat brain. American Heart Association Young Investigators Forum. September, 2003
4. **Carmichael ST.**, Archibeque I, Katsman D. Axonal sprouting after stroke occurs within specific cortical circuits and involves a unique profile of growth associated proteins. American Heart Association Young Investigators Forum. September, 2003.
5. **Carmichael ST**, Archibeque I, Katsman D (2003) Axonal sprouting after stroke occurs within specific cortical circuits and involves a unique profile of growth-associated proteins. Soc Neurosci Abst. 358.12
6. Li, S., Zheng, J., **Carmichael, S.T**. Ischemic injury and axonal sprouting-associated gene expression in the aged brain after stroke. UCLA Aging Conference, June 2004.
7. Li, S., Zheng,, |J., Archibeque, I., **Carmichael. S.T**. Ischemic injury and axonal sprouting-associated gene expression in the aged brain after stroke. American Heart Association Young Investigators Forum. September, 2004.
8. **Carmichael, S.T.**, Archibeque, I., Nolan, T., Luke, L., Li, S., Katsman, D. Stroke induces a unique profile of neuronal growth-associated genes in the region of axonal sprouting. Soc Neurosci. Abst., 10/2004
9. Luke, L., Momiy, J., Archibeque, I., Nolan, T., Katsman, D., **Carmichael, S.T**. Stroke induces reorganization and reduction in growth-inhibitory molecules during axonal sprouting. Soc Neurosci. Abst., 10/2004
10. Li, S., Zheng; J., **Carmichael, S.T**. Ischemic injury and axonal sprouting-associated gene expression in the aged brain after stroke. Soc Neurosci. Abst., 10/2004
11. Ohab, J., Nolan, T., **Carmichael, S.T**. Post-stroke neurogenesis in the mouse: long-distance migration into reelin positive cortical areas. Soc Neurosci. Abst., 10/2004

12. **Carmichael, S.T.**, Archibeque, I., Nolan, T., Luke, L., Li, S., Katsman, D. Stroke induces a unique profile of neuronal growth-associated genes in the region of axonal sprouting. Keystone Conference, C6, 4/2005
13. **Carmichael ST**, Ohab J., Nguyen J. Post-Stroke Neurogenesis and the Neurovascular Niche: newly born neuroblasts localize to peri-infarct cortex in close association with the vascular endothelium. Brain '05, Cerebral Blood Flow and Metabolism Meeting, 2005.
14. **Carmichael ST**, Ohab JJ, Tsai P, Wu H. The Role of the Erythropoietin Receptor in Normal and Post-Stroke Neurogenesis. Soc Neurosci. Abst. 2005
15. Drew C, Nguyen JT, **Carmichael ST**. Stroke Induces a Novel Neurovascular Niche for Post-Stroke Neuroblast Migration to Peri-Infarct Cortex. Soc Neurosci. Abst. 2005.
16. Katsman D, **Carmichael ST**. Selective Isolation and Gene Expression Analysis of Sprouting Neurons after Focal Stroke. Soc Neurosci. Abst. 2005
17. Li S, **Carmichael ST**. Expression Patterns of Growth-associated Genes and Proteins in the Aged Brain after Experimental Stroke. Soc Neurosci. Abst. 2005
18. Ohab JJ, **Carmichael ST**. The role of the SDF - 1/CXCR4 chemokine system in post stroke neuroblast migration to injured cortex. Soc Neurosci. Abst. 2005.
19. Li S and **Carmichael ST**. Unique growth-inhibitory gene expression after stroke in the aged brain: Ephrin-A5 and Mag induction. Soc Neurosci. Abst. 2006.
20. Ohab JJ and **Carmichael ST**. Angiopoietin-1 Induces Neuroblast Migration to Peri-Infarct Cortex after Stroke. Soc Neurosci. Abst. 2006.
21. McGiffert CM and **Carmichael ST**. Identification of signaling molecules in the formation of new neurons after stroke. Soc Neurosci. Abst. 2007.
22. Overman JJ, Kwok A, Willis D, Katsman D, Twiss J, Li S, **Carmichael ST**. Post-Stroke Blockade of EphrinA5 Increases Axonal Sprouting in Layer IV of the Mouse Somatosensory Cortex. Soc Neurosci. Abst. 2007.
23. Li S, Katsman D, Coppola C, Geschwind DH, **Carmichael ST**. Gene expression analysis of identified sprouting neurons in peri-infarct cortex after stroke. Soc Neurosci. Abst. 2007.
24. Walker EM, Sioshansi PC, **Carmichael ST**. Behavioral Augmentation of Neurogenesis after Stroke: Unexpected Effects of Constraining Mice to Use Their Affected Limbs. Soc Neurosci. Abst. 2007
25. Li S., Katsman D., Coppola G., Geschwind DH, **Carmichael ST**. Regeneration transcriptome after stroke: molecular profile of axonal sprouting in peri-infarct cortex. Plasticity and Repair in Neurodegenerative Disorders, 3<sup>rd</sup> Biennial Workshop. 2008.
26. Overman JJ, Kalaria S, Overman B, Willis D, Katsman D, Twiss J, Li S, **Carmichael ST** Post-Stroke Blockade of EphrinA5 Increases Axonal Sprouting in Layer IV of the Mouse Somatosensory Cortex Plasticity and Repair in Neurodegenerative Disorders, 3<sup>rd</sup> Biennial Workshop. 2008.
27. Clarkson AN, Chan C, Overman JJ, Nair S, **Carmichael ST**. The GABA(A) receptor alpha5 inverse agonist, L-655,708, improves behavioral outcomes and stimulates axonal sprouting following photothrombotic stroke in mice. Queensland Brain Institute (QBI) Brain Plasticity Symposium
28. Sozemen E, Kolekar A, **Carmichael ST**. Characterization of oligodendrocyte progenitors and white matter remyelination in subcortical stroke. Glia in Health & Disease. Cold Spring Harbor conference, 2008.